

REMARKS

Applicants appreciate Examiner's timely and thorough review of the application. Amendments to the Specification, including the Abstract, the Drawings, and the Claims have been done to address Examiner's concerns. No new material has been added. Reconsideration of the application is respectfully requested.

To assist in reviewing Applicants' response: where Applicants have quoted Examiner's office action, the quoted material is single-spaced and indented and Applicants' response to Examiner's concerns is in bold print.

In para. 1 of the office action, Examiner objected to the Specification as follows:

The disclosure is objected to because of the following informalities:

In the abstract, line 5, the disclosure states "fish... are converted to pet food." The remainder of the disclosure does not provide such limitations or functions. Please clarify.

On pages 7-8 of the disclosure, the brief descriptions of the drawings are not explained clearly.

On page 9, lines 5-12 of the disclosure, the applicant appears to have used "the z direction" where he may have meant to use "the y direction." Please clarify.

Appropriate correction is required.

Applicants have corrected the Abstract to comply with the Specification, added verbiage to make the description of the drawings more clear, but have not changed the terminology on page 9, lines 5-12 from "the z direction" to "the y direction" as this is what Applicants intended to write. However, the numbers referred to in the drawings were incorrect and both the drawings and the Specification have been amended to correct this inconsistency.

In para. 2 of the office action, Examiner objected to the Claims as follows:

Claims 7, 9, 11, 12, 13, 15, 16 and 17-20 are objected to because of the following informalities:

Claim 7, line 3, contains a period in the middle of the line after "and combinations thereof." All claims should be a sentence long ending with a period.

Claim 9, line 1 contains limitations regarding "said modules." However, prior language in the claims from which claim 9 depends from do not mention modules. This limitation does not have antecedent basis.

Claim 12, line 1 contains limitations wherein "at least one visual cue is precluded." This claim's language is not clear and does not set forth definitively what the applicant intends to claim.

5 Claim 15, lines 1 and 4 contain limitations regarding "said wedge-shaped extension." However, prior language in the claims from which claim 15 depends do not mention a wedge shaped extension. This limitation does not have antecedent basis.

10 Claim 17, line 2 claims limitation regarding "a path in the water..." However, "water" has not been mentioned in prior claim language. This claim should be further clarified.

Claim 20, lines 2 and 6, contains limitations regarding "at least one OH-SBC." However, prior language in the claims from which claim 20 depends from do (not?) (sic) provide a definition for "OH-SBC." This limitation does not have antecedent basis.

15 Appropriate correction is required.

Applicants have amended Claims 7, 9, 11, 12, 15, 16, and 17-18, and 20 to address Examiner's concerns. Although Claims 11, 13, 18 and 19 were mentioned in the preamble to the paragraph, they were not specifically identified as having objectionable verbiage, hence these have not been amended in response to objections specifically stated in this paragraph. However Claims 11, 18 and 19 have been amended for other reasons.

In para. 3 of the office action, Examiner rejects all claims under 35 U.S.C. 112 quoting the 2nd paragraph thereof.

25 In para. 4 of the office action, Examiner states:

Claims 1-22 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

30 The claims are indefinite. The structure which goes to make up the device must clearly and positively specified. It appears that the subject matter in the independent claims happen in (sic) naturally in nature. It is not clear what the applicant is claiming his/her invention to be. Appropriate action is required.

Applicants have amended independent claims 1, 17 and 21 to address Examiner's concerns as further specified below. As well, dependent claims 2, 4, 7, 9-12, 14-16, 18, and 19-21 have been amended.

In para. 5 of the office action, Examiner rejects claims 1, 2, 7, 11, 17-19, 21 and 22 under 35 U.S.C. 102 quoting paragraphs (b) and (e) thereof.

In para. 6 of the office action, Examiner states:

As best understood, claims 1, 2, 7, 11, 17-19, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Koch (4,437,431).

Regarding claims 1, 2, 7, 17, 21 and 22, Koch discloses a method and apparatus for diversion of migrating fish comprising a system that simulates a hydraulic cue for fish by forming increased stream flow in a body of water to the point where fish are carried in some manner around a barrier in the body of water, specifically in a dam (see abstract). The body of water is a stream, which has a spillway S that is an intake for turbines for generating hydroelectric power located at T. The stream has both an upstream and a downstream side.

Regarding claim 11, as broadly claimed by the applicant, Koch's system is selected to operate at an optimum level with respect to the intake.

Regarding claims 2, 18 and 19, as broadly claimed by the applicant, the fish instinctively respond to the hydraulic cue formed by the increased stream flow, as they cannot retreat from it thereby minimizing strain rate variables with respect to the depth and width of the stream (see abstract).

Claims 1, 2, 7, 11, 17-19, and 21 have been amended to address Examiner's concerns. Claim 22 is dependent on one or more of these amended claims and thus is also addressed by amending the claims from which it depends. The Koch '431 patent uses an active system employing jets to form the artificial stream and an in-line high volume pump. This is exactly what Applicants avoid as detailed at p. 7, lines 7-13, p. 12, lines 5-10, p. 14, lines 5-14.

In para. 7 of the office action, Examiner states:

As best understood, claims 1, 2, 7, 17-19, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Chicha (5,632,572).

Regarding claims 1, 7, 17, 21 and 22, Chicha discloses a method and apparatus for guiding fish comprising a system that simulates a hydraulic cue for fish by providing a faster moving channel in a body of water to the point where fish instinctively tend to remain within the faster moving channel. The system is used to direct fish movement through small areas or large dam backwaters (see abstract and column 3, lines 50-56 and column 4, lines 24-34).

Regarding claims 2, 18 and 19, as broadly claimed by the applicant, the fish instinctively respond to the hydraulic cue formed by the faster moving channel minimizing strain rate variables with respect to the depth and width of the stream.

Claims 1, 2, 7, 17-19, and 21 have been amended to address Examiner's concerns. Claim 22 is dependent on one or more of these amended claims and thus is also addressed by amending the claims from which it depends. The

Chicha '572 patent uses an active system employing jets to form the artificial stream and complicated float arrangements that will require maintenance and much hand labor to install. This is exactly what Applicants avoid as detailed at p. 7, lines 7-13, p. 12, lines 5-10, p. 14, lines 5-14.

In para. 8 of the office action, Examiner states:

As best understood, claims 1-3, 6, 7-11, 15, 17-21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson (6,467,997).

Regarding claims 1, 7, 17, 21 and 22, Johnson discloses a method and system for diversion of fish around a structure comprising a system that simulates a hydraulic cue for fish by forming a flow scoop 34 in a body of water to the point where fish are carried in some manner around a barrier in the body of water, such as a dam 14 (see column 3, lines 60-65). The body of water is a stream, which has a dam 14 with a water intake 16. The stream has both an upstream and a downstream side.

Regarding claims 3 and 15, Johnson's system discloses a wedge-shaped frame 30 that functions as a collector having length, width, a top, a bottom, an interior, and an exterior surface wherein the frame is positioned adjacent and parallel to the upstream side of a barrier or dam 14 and wherein the top of the frame is generally parallel to the upstream side of the dam and the top of the frame is generally parallel with the surface of the body of water. Further, as broadly claimed by the applicant, Johnson's extension 34 is capable of eliminating a zone of dead water that may be adjacent the upstream side of the barrier.

Regarding claims 6, 8-10 and 20, Johnson's system discloses a frame 30 that comprises at least one panel 40, or module, wherein the panel is pivotably connected to the frame permitting adjustment of the collector to the upstream side of the dam.

Regarding claim 11, as broadly claimed by the applicant, Johnson's system is selected to operate at an optimum level with respect to the intake.

Regarding claims 2, 18 and 19, , as broadly claimed by the applicant, the fish in Johnson's system instinctively respond to the hydraulic cue formed by flow scoop thereby minimizing strain rate variables with respect to the depth and width of the stream.

Claims 1-2, 7, 9-11, 15, and 17-21 have been amended to address Examiner's concerns. Claims 3, 6, 8 and 22 are dependent on one or more of these amended claims and thus are also addressed by amending the claims from which they depend.

Specifically noting but a few differences in the Johnson '997 patent as now differentiated by the above amended claims:

- a. The Johnson '997 patent does not address the elimination of the vertical eddy by having an extension to an essentially horizontally oriented system (Fig. 1 and Fig. 4 at 407 of Applicant's invention).
- b. The Johnson '997 patent does not have a movable plate (Fig. 4 at 410 of Applicants' invention) at the entrance to a collection gallery.
- c. The Johnson '997 patent actually slows the flow of water along the front (upstream) edge of the screen as the fish proceed up the screen whereas Applicant's invention increases flow into the collection gallery on the downstream side of the structure, thus establishing the natural cue (Fig. 4 at 413 and Fig. 7 at 701, p. 7, lines 3-6)
- d. The Johnson '997 patent does not provide for vertical adjustment of the system on the barrier (dam, etc.) while not changing the horizontal orientation of the system including the extension (wedge-shaped) with respect to the water surface as Applicant's invention provides (Fig. 4 at 412 and p. 7, lines 19-21) but rather changes the angle of the screen if necessary
- e. The Johnson '997 patent does not provide for altering the angle of water flow into the collection gallery by a movable articulating extension (Fig. 4 at 410, p. 15, lines 15, 16) controlled by a sensor (Fig. 4 at 411 and p. 7, lines 17-18, p. 15, lines 18-21).
- f. The Johnson '997 patent does not provide for supporting the structure via use of flotation material in an extension (Fig. 4 at 407, 408, p. 11, lines 17-19)
- g. The Johnson '997 patent brings fish in at the top of the structure whereas Applicant's invention brings them in at the bottom (Fig. 4 at 410, 411) where it is in a "shaded zone of reduced light intensity" reducing the need of the fish to rely on visual acuity to navigate (p. 7, lines 13-16)
- h. The Johnson '997 patent does not provide for alternative enticements for fish such as painting the collector gallery a neutral color, having smooth sides on the collector gallery to reduce turbulence, and introducing sound or light into the collector gallery (p. 5, line 24 to p. 6, line 4)

In para. 9 of the office action, Examiner lists allowable subject matter, stating:

As best understood, claims 4, 5, 12-14, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants have rewritten claims 4, 5, 12-14, and 16 as new claims 23-28. A Fee Transmittal form is enclosed to cover the additional fees.

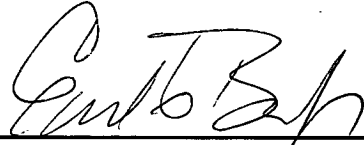
In para. 10 of the office action, Examiner states a conclusion:

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Warner et al. (4,904,114) disclose a fish conveying apparatus. Safwat (6,347,908) discloses a fish guidance system. March et al. (6,357,389) disclose a control system for enhancing fish survivability in a hydroelectric power generation installation.

Applicants have reviewed the above prior art of record and believe their invention to be patentably distinct therefrom, including any combinations thereof.

No new matter has been entered via this amendment. All drawings have been amended and both the amended drawings and the marked up originals are provided. In view of the foregoing, it is respectfully requested that the subject application be passed to issue as amended hereby with currently amended Claims 1 – 2, 4, 7, 9–12 and 14 – 21, original Claims 3, 5, 6, 8, 13, and 22 and new Claims 23 – 28.

Respectfully Submitted,

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